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ABSTRACT

A diverse body of educational research provides strong theoretical support for the development of higher order cognitive learning skills through case teaching. Case study teachers can improve their questioning skills to enhance students' critical thinking. The theoretical background for questioning in case method teaching and learning is traceable to the functionalism and pragmatism of John Dewey and William James, the cognitive domain classification system of Benjamin Bloom, the cognitivists' conception of metacognition, and the reflective thinking of existentialists. The diathesis theory of human predisposition to either healthy wholeness or diseased fragmentation can be applied effectively to case study teaching. For anyone using the case study method (particularly cases involving ethical or other social issues), several factors should be considered: opportunities occur for both low and high levels of cognitive experiences, the writing-to-learn questionnaire leads to clear and succinct responses, and teachers should prepare a series of open-ended and probing discussion questions. An appendix presents a sample case involving a new teacher on the first day of the job facing a group of difficult students. The students were violent, the environment hostile, the fellow teachers belittling, and the teacher had to handle the challenge of the situation (Contains 17 references and 3 tables.) (SM)

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THE CASE STUDY METHOD: CRITICAL THINKING ENHANCED BY EFFECTIVE TEACHER QUESTIONING SKILLS

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Abstract

Can case study teaching methodology enhance the critical thinking abilities of college students? The authors, by including ideas and strategies from cognitive psychology and critical teaching research, and structuring both low level and higher order questioning strategies have aimed at improving student problem solving, case analysis, metacognition, and conscientization skills.

The case selected for this discussion brings to light the accepting of the role of responsible leadership in a non-friendly environment. The ethical implications of the case provide an effective illustration of the importance of metacognition, reflection and conscientization as learning outcomes for students in higher education programs.

KEYWORDS: Questioning - Low Level, Questioning - High Level, Critical Thinking, Metacognition, Reflection, Conscientization, Diathesis Theory, Ethics.

INTRODUCTION

In our rapidly changing society, individuals need to be aware of how they cope with and adjust to the dynamics of change. The thesis of this paper is that the case study method is an effective way to develop higher order cognitive and affective learning and critical thinking ability, especially as it relates to learning, unlearning, and relearning. The authors used higher order questioning to develop critical thinking skills in a class of Junior and Senior liberal arts and education majors in a state university in order to encourage learning beyond simple memorization and comprehension. In the case used, "We're the Retards," a new teacher experiences a difficult and violent group of students on the first day of her career – and feels challenged to quit or persevere.

Case teaching can help students learn to grow and become proactive in a dynamic environment. Critical theorists state that students and teachers should develop their own voice, be empowered to think, and learn to question – in a process called conscientization [Wink, 2000, p. 37]. This is a power of knowing that we know, an empowerment to go out and make a difference in self and in the world. Case study teaching can foster the critical thinking skills of teachers and students when lower and higher order, probing, and reflective

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questioning skills are effectively used.

JUSTIFICATION

One of the more effective and enduring teaching methods and learning tools that has gained increased status is that of the case study method, often categorized as an indirect teaching technique. The case study method is often favored over direct teaching methods, such as the lecture approach, because it can be used effectively to involve higher cognitive skills of application, analysis, synthesis, evaluation, metacognition, conscientization, and reflection. The case study method is essentially a universal problem solving method in the sense that all human cognition is purposeful, and aims at achieving goals or removing obstacles to those goals [Anderson, 1990].

Crespy, Rosenthal, and Stearns [1999], along with other authors, offer three strong pragmatic arguments for the use of the case study method in higher business education: (1) demands of meeting mission-driven accreditation standards and objectives established for schools of business education by their accrediting agencies; (2) recognition of types of demands placed on business school graduates by contemporary organizations; (3) importance of critical thinking and higher order learning objectives, which is a logical outgrowth of the demands of accreditation and demands of contemporary organizations.

LEVELS OF STUDENT LEARNING

It is important to recognize that a student's fundamental learning can occur on different levels. Schemata validated by previous learning and experience may make learning new material "easier" at the lower cognition levels, but more difficult to accept at the higher levels or when new knowledge is available [Anderson, 1999]. General learning levels considered for this paper include the following: (1) knowledge of and from the assigned case; (2) other knowledge related to the case, necessary for deeper understanding; and (3) knowledge at the personal level of new intuitive awarenesses may involve learning, unlearning, and relearning.

Once exposed to the case, either in written or oral/pictorial form, the instructor's role is challenged to lead the students through the appropriate learning skills. Therefore, selection of appropriate cases is important, but skillful questioning and discussion leadership also are critical for developing new insights at each cognitive level.

QUESTIONING

Since Socrates, and probably before, teachers have used questions to stimulate thinking in the classroom. Appropriate questions help "teachers and students learn from one another" [Lathan, 1957]. Reviews of research findings on questioning contend that it is an effective skill "to stimulate student interaction, thinking, and learning" [Wilen, Ishler, Hutchison, and Kindsvatter, 2000]. A teacher's questioning techniques, that correlate with enhanced achievement, include a balance of convergent and divergent questions, probing questions, listening to student responses, redirecting student responses to other students, providing respectful feedback, and allowing for appropriate wait time after asking a question. Whereas convergent questions serve a purpose of getting low level cognitive information from students, divergent or open-ended questions are more likely to stimulate a discussion and foster an interactive and democratic classroom atmosphere suitable for case study teaching.

The focus of this article is on the third of these factors – the achievement of higher order learning through the case teaching method. Supporting educational theories and pedagogical approaches are discussed.

QUESTIONING IN CASE THEORY: OLD AND NEW

The theoretical background for questioning in case method teaching and learning is traceable to the functionalism and pragmatism of John Dewey and William James, the Cognitive Domain classification system of Benjamin Bloom, the cognitivists' concept of metacognition, and the reflective thinking of the Existentialists. That the case study method and others have long replaced the recitation method in higher education reflects

the paradigm shift from the faculty psychology[1] period to the competing paradigms of behaviorism, humanistic psychology, the cognitive psychology of today, the ever-present pragmatism of Dewey, the Existentialists, and the praxis movement of the Critical Theorists.

COGNITIVE CATEGORIES FOR QUESTIONING

Whereas John Dewey [1938, 1998, 2001] stressed that learning resulted from many kinds of experience, especially those that produced further learning and reflective thinking, Benjamin Bloom [1956] focused on the cognitive domain. In Bloom's well-known cognitive categories, a strong emphasis is placed on the hierarchical nature of knowledge. Hence, to effectively interpret, analyze, synthesize, and evaluate case material, a strong understanding of the lower cognitive levels, such as memorization and comprehension is essential. Bloom's categories and examples for developing teachers' questions follow:

Memory: Name the CEO of Disney World.
Comprehension: Explain the meaning of hubris.
Application: Solve problem A.
Analysis: Critique the arguments made by Philip Morris in the readings.
Synthesis: Create a new marketing logo for Nike.
Evaluation: Justify your support for the new marketing strategy.

When case analysis and discussion are limited to the first two or three categories, useful higher order insights are lost. Likewise, attempting to bypass the lower cognitive levels and start at the higher levels may be detrimental to learning. This set of questions will be applied to the case.

HEMISPHERICITY AND QUESTIONING

The theories of Dewey and Bloom also implicitly support the use of cases that are strongly visual. Case study teaching has gained strength from the intriguing research on hemisphericity – the verbal learning and processing of the left brain, and the learning resulting from the visual and affective processing of the right brain. Great writers, artists, and photographers have successfully stimulated our imagination for centuries by capturing images, experiences, and performances. Following in the path of demonstrations as a powerful learning tool, hemisphericity theory strongly supports both "right brain" and "left brain" learning experiences, both visual/emotional and verbal/logical experiences. Case study methodology that blends video and verbal images can be effective in developing visualization skills. The ability to "hold" an image or series of images for later analysis and reflection is an important skill enhanced by studying excellent cases. Bloom's questioning categories can be equally well used with movies, videotapes, and other media related to the case being studied.

Historically, oral stories have provided the patterns for insights and understanding. Good storytellers build images in the listener's mind, as do good case teachers. The Steven Spielbergs of case study teaching maintain a balance of information and visualization.

CASE SELECTION, MULTIPLE INTELLIGENCES, AND QUESTIONING

The research on hemisphericity discussed in the previous section indicates that individuals are able to think and visualize in many different ways throughout the learning process. From a similar perspective, cases that reflect one or more of the eight "multiple" intelligences of Howard Gardner [1983; 1996] can be selected. Perhaps sets of questions reflecting the eight intelligences can be based on one case, since each individual has each type of intelligence to a greater or lesser degree.

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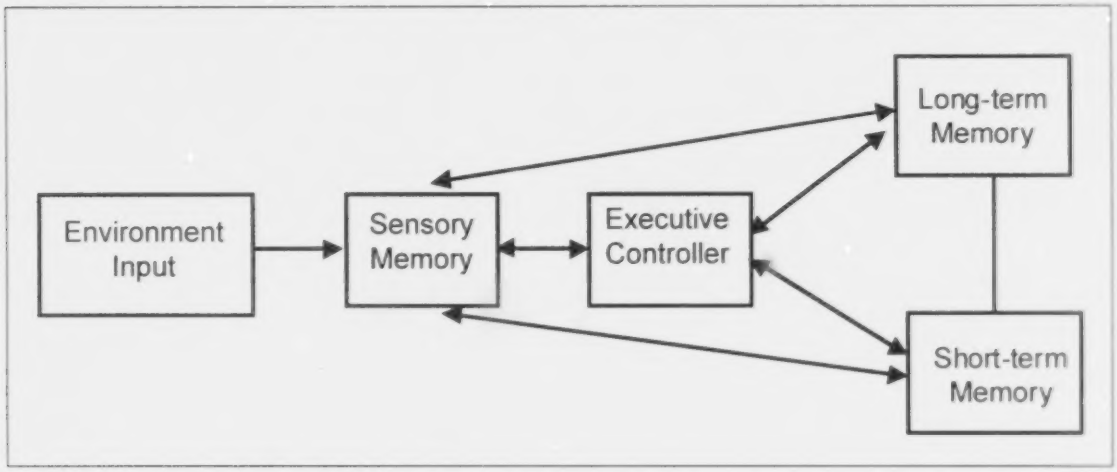
1 Faculty psychology refers to any of the powers formerly thought of as composing the mind (i.e., will, reason, etc.; innate skills, talents). For further information, see James Puliam, *History and Philosophy of Education*, Eighth Edition, Upper Saddle River, NJ: Merrill/Prentice-Hall (1999).

METACOGNITION AND THINKING

Cognitive psychologists have more recently focused on the individual's ability to self-examine his or her thoughts and thought processes. Metacognition is the ability to be aware of, monitor, and evaluate one's thinking. Metacognition does not occur automatically; it is the result of long-term development of the cognitive system [Jacobson, 1998]. According to Matlin [1989], metacognition is "the knowledge of and awareness about our own cognitive processes." This self-understanding of how one learns is developed to include domains other than just the cognitive domain. Schoenfield [1987] considers beliefs, attitudes, and self-regulation subject to the metacognitive process. In the realization that each individual makes a number of decisions between the stimulus and the response, cognitive psychologists have described the "power" that directs the learning to short-term memory or long-term memory as the "Executive Controller" or metacognition. Ashcraft [1989] states that this awareness of the learning process — metacognition — is a power that can be learned. This seems quite analogous to the old adage: One must learn to think in the manner appropriate to the discipline; or the Socratic admonition to "know thyself."

Figure 1: Ashcraft's Model of Human Memory



The power and influence of metacognition is shown as the "Executive Controller" in the revised memory model [Ashcraft, 1989], as shown in Figure 1. The skill of developing awareness during, and of, our problem solving processes or thinking can be learned in the case study method through the use of judicious questions.

Sample questions that can be used with an assigned case to enhance one's "Executive Controller"/metacognitive skills include the following:

- What is the main idea, thesis, problem, principle or law?
- What supporting evidence is given/missing?
- What do I understand, do I not understand?
- Where can I find an appropriate explanation?
- Is there pre-knowledge that I need to better understand this material?
- Based on this understanding, what can I anticipate?
- How can I move this knowledge into long-term memory?
- How has my self-knowledge and understanding grown/improved/matured?

A review of the literature on metacognition by Jacobson [1998] offers additional factors to consider when using this approach in case teaching:

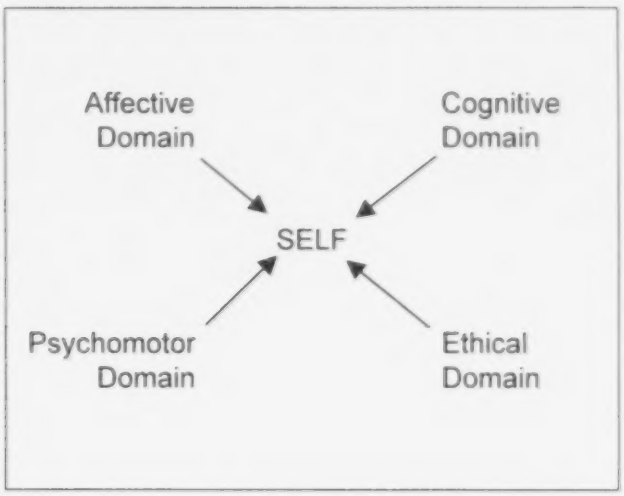
- A learning environment enhanced by personal meaning and relevance, and where learning occurs in a natural way, increases learning and the ability to make a connection between knowing and doing.
- Students have "thinking dispositions" that encompass ability, inclination toward a particular behavior, knowing a particular behavior, and knowing when the behavior is appropriate.

- Self-awareness of one's intellectual behavior is an essential aspect of metacognition; without it, an individual cannot improve his or her thinking skills.
- As Gibran [1923] admonishes: "If he [the professor/teacher] is indeed wise he does not bid you enter the house of his wisdom, but rather leads you to the threshold of your own mind." (Note that teachers also must consider cultural influences and the personal experiences of students in the metacognitive process.)

DIATHESIS THEORY – QUESTIONING TO AVOID/OVERCOME FRAGMENTATION

The Diathesis Theory, the human predisposition to either healthy wholeness or diseased fragmentation [Wood, 1982, 1999], can be applied effectively to case study teaching. Here, the focus of the teaching/learning experience will constantly shift between the cognitive, affective, psychomotor, and ethical domains to avoid fragmentation and marginalization. For example, the reflective thinking of a business manager or educational leader should include an awareness of cognitive, affective, psychomotor, and ethical aspects of a decision (see Figure 2). All integrated human experience includes aspects of cognition, feeling, action, and ethical values. In case study teaching, the oral or written question will move the student's scrutiny of the case from an objective analysis to a personal integration of metacognitive awareness – one of those "Aha!" experiences when things click into place. When insight has occurred, it is likely that the awareness has been achieved at the level of "Self." It is interesting to note that at one level of meaning, personal integrity is a metaphor for integrating the self. The Diathesis Theory holds that these four dimensions of each individual's human nature are challenged when they are not in harmony with one another, and consequently the inner self is in some degree of distress or dissonance until equilibrium is restored. (This state of disequilibrium often is referred to as dissonance.) The teacher's responsibility to make the connections, directly or indirectly between the affective, cognitive, psychomotor, and ethical domains is imperative for learning to be properly integrated, and so avoid fragmentation from self and facilitate higher order learning.

Figure 2: The Diathesis Theory



At the first level of awareness in the human diathesis, the stimuli are often external or objective in nature. One hears the dog barking, or one feels the bee stinging, or talks about a concept. Singer Peggy Lee felt compelled to ask her famous first level reflective question: "Is that all there is?" This question is an example of reflection at the sensory level where an individual is simply aware. Learning and understanding, as embodied in subjective thinking, goes further. At the second level of reflection, one becomes aware of one's awareness of a stimulus. This second level of awareness empowers one subjectively to react in a more thoughtful, compassionate, appropriate, and ethical way. Thus, learning and understanding occur at a much higher

cognitive level.

The ability to hold the second "awareness of awareness" in one's mind and intellectually interrogate this awareness gives each individual the power to make significant changes in one's insights, attitudes, behaviors, and beliefs. As this second level of awareness cannot be mandated, the indirect structure of the case study method is a potentially useful tool in helping students adapt to and cope with constant change.

SUMMARY AND RECOMMENDATIONS

A diverse body of educational research provides strong theoretical support for the development of higher order cognitive learning skills through case teaching. Theories and perspectives discussed in this paper evolve from pragmatism. Case study teachers can improve their questioning skills to enhance the critical thinking of students.

For anyone using this type of modified case study method (particularly for cases involving ethical or other social issues), the following factors should be considered:

* Opportunities occur for both low and high levels of cognitive experiences.
* The writing-to-learn questionnaire leads to clear and succinct responses.
  - An in-class writing activity following classroom discussion in this study can provide additional opportunities for metacognition and reflective thinking. This could be combined with an expanded role playing experience, as in Question 16 (Table 3 in Appendix A): What would you personally recommend as a solution to the case if you were ----?
  - The field of case authors that both write for and make supportive videos appears to be underdeveloped at this time; thus, opportunities abound for creation of this type of teaching materials that can be used in conjunction with this questioning method.
  - A balance of cognitive, feeling, action, and ethical questions and activities can create an integrated learning experience.
  - For the teaching of ethics, and issues in ethics, the case study method is an excellent learning technique.
* Teachers should prepare a series of open-ended and probing discussion questions.
  - The process of clarifying and probing questions leads students to better understand how they learn, how they process knowledge, and how to hold images and reflect upon their visualizations.
  - A combination of intense verbal interaction and active listening gives students an opportunity to question their assumptions and opinions and enlarge their critical thinking capacities and gain professional knowledge.
  - The role of the instructor is critical in facilitating dialogue and establishing a supportive and challenging climate for the case study classroom.

APPENDIX A

Students in an elective course for juniors and seniors, "Ethics In Education," were assigned a leadership case to read. These students were all within three months to one year of graduation and accepting the leadership responsibilities of their first professional job. The case involves a new teacher on the first day of the job, and facing a difficult group of students. The students were violent, the environment was hostile, and fellow teachers were belittling. This teacher had accepted the contract, but the teacher had yet to accept the responsibilities of this challenge.

An example study guide for the case, "We're the Retards" (Table 1) is provided below. Questioning techniques are presented in Tables 2 and 3.

Study Guide for Initial Reaction

1. Facts
2. Potential Solutions
3. Group Discussion
4. Metacognitive Insights
5. Conscientization Actions

Table 1: Case: "We're the Retards"

On my first day of teaching, all my classes were going well. Being a teacher was going to be a cinch, I decided. Then came period seven, the last class of the day.

As I walked toward the room, I heard furniture crash. Rounding the corner, I saw one boy pinning another to the floor. "Listen, you retard!" yelled the one on the bottom. "I don't give a damn about your sister!"

"You keep your hands off her, you hear me?" the boy on top threatened.

I drew up my short frame and asked them to stop fighting. Suddenly, 14 pairs of eyes were riveted on my face. I knew I did not look convincing. Glaring at each other and me, the two boys slowly took their seats. At that moment, the teacher from across the hall stuck his head in the door and shouted at my students to sit down, shut up and do what I said. I was left feeling powerless.

I tried to teach the lesson I had prepared but was met with a sea of guarded faces. As the class was leaving, I detained the boy who had instigated the fight. I'll call him Mark. "Lady, don't waste your time, " he told me. "We're the retards." Then Mark strolled out of the room.

Dumbstruck, I slumped into my chair and wondered if I should have become a teacher. Was the only cure for problems like this to get out? I told myself I'd suffer for one year, and after my marriage that next summer I'd do something more rewarding.

"They got to you, didn't they?" It was my colleague who had come into my classroom earlier. I nodded.

"Don't worry," he said. "I taught many of them in summer school. There are only 14 of them, and most won't graduate anyway. Don't waste your time with those kids."

"What do you mean?"

"They live in shacks in the fields. They're migratory labor, pickers' kids. They come to school only when they feel like it. The boy on the floor had pestered Mark's sister while they were picking beans together. I had to tell them to shut up at lunch today. Just keep them busy and quiet. If they cause any trouble, send them to me."

As I gathered my things to go home, I couldn't forget the look on Mark's face as he said, "We're the retards." *Retards*. That word clattered in my brain. I knew I had to do something drastic.

The next afternoon I asked my colleague not to come into my class again. I needed to handle the kids in my own way. I returned to my room and made eye contact with each student. Then I went to the board and wrote ECINAJ.

"That's my first name," I said. "Can you tell me what it is?"

They told me my name was "weird" and that they had never seen it before. I went to the board again and this time wrote JANICE. Several of them blurted the word, then gave me a funny look.

"You're right, my name is Janice," I said. "I'm learning-impaired, something called dyslexia. When I began school I couldn't write my own name correctly. I couldn't spell words, and numbers swam in my head. I was labeled 'retarded.' That's right – I was a 'retard.' I can still hear those awful voices and feel the shame."

"So how'd you become a teacher?" someone asked.

"Because I hate labels and I'm not stupid and I love to learn. That's what this class is going to be about. If you like the label 'retard,' then you don't belong here. Change classes. There are no retarded people in this room.

"I'm not going to be easy on you," I continued. "We're going to work and work until you catch up. You *will* graduate, and I hope some of you will go on to college. That's not a joke – it's a promise. I don't *ever* want to hear the word 'retard' in this room again. Do you understand?"

They seemed to sit up a little straighter.

We did work hard, and I soon caught glimpses of promise. Mark, especially, was very bright. I heard him tell a boy in the hall, "This book's real good. We don't read baby books in there." He was holding a copy of *To Kill A Mockingbird*.

Months flew by, and the improvement was wonderful. Then one day Mark said, "But people still think we're stupid 'cause we don't talk right. " It was the moment I had been waiting for. Now we could begin intensive study of grammar because they wanted it.

I was sorry to see the month of June approach; they wanted to learn so much. All my students knew I was getting married and moving out of state. The students in my last-period class were visibly agitated whenever I mentioned it. I was glad they had become fond of me, but what was wrong? Were they angry I was leaving the school?

On my final day of classes, the principal greeted me as I entered the building. "Will you come with me, something has happened and I want to 'walk you' to your classroom." He looked straight ahead as he led me down the hall. What now? I wondered.

It was amazing! There were sprays of flowers in each corner, bouquets on the students' desks and filing cabinets, and a huge blanket of flowers lying on my desk. *How could they have done this?* I wondered. Most of them were so poor that they relied on the school assistance program for warm clothing and decent meals.

I started to cry, and they joined me.

Later I learned how they had pulled it off. Mark, who worked in the local flower shop on weekends, had seen orders from several of my other classes. He mentioned them to his classmates. Too proud to ever again wear an insulting label like "poor," Mark had asked the florist for all the "tired" flowers in the shop. Then he called funeral parlors and explained that his class needed flowers for a teacher who was leaving. They agreed to give him bouquets saved after each funeral.

That was not the only tribute they paid me, though. Two years later, all 14 students graduated, and six earned college scholarships.

Twenty-eight years later, I'm teaching in an academically strong school not too far from where I began my career. I learned that Mark married his college sweetheart and is a successful businessman. And, coincidentally, three years ago Mark's son was in my sophomore honors English class.

Sometimes I laugh when I recall the end of my first day as a teacher. To think I considered quitting to do something *rewarding*!

Janice Anderson Connolly

Table 2: Case Study Teaching: Questions for Metacognition and Higher Order Thinking

1. **Case Study Assignment**
   a. Ask students to read the case (for comprehension, not merely to skim or scan)
   b. Review (brief pop quiz to "what" questions)

2. **Leading the Case Study Discussion**
   a. Ask students open-ended questions
      - Redirect answers or silence to other students
      - Ask for clarification.
      - Ask for additional information.
      - Ask justification questions ("why")
   b. Ask further open-ended questions

3. **Leading the Case Study Problem Solving Exercise**
   a. Ask students to identify the problem
      - Redirect answers to other students
      - Define the problem (tentatively)
   b. Ask for possible solutions (brainstorming, individually and small groups)
   c. Select one plausible solution
   d. Test the given solution
   e. Evaluate the effectiveness of the solution
      (If outcome is unsatisfactory, begin again)

Table 3: Reflective Analysis: Questions to Ask

"What" questions:

1. What is your first impression after reading this case?
2. Give a brief statement of what happened in the case.

"Opinion" statement:

3a. In your opinion, should...?
3b. Should an....?

"Identification" questions:

4. Have you ever been in a situation like this, or do you know someone who has?
5. What types of...?
6. Have you ever...?
7. Are you familiar with...?
8. How are you like or unlike the characters in the case?

"Feelings" questions:

9. What positive feelings (affect) do you have, if any, toward the...?
10. How was...?
11. How do you feel about...?
12. What would you feel if you were...?
13. If you were the one... would you want to be...?
14. If the...would you feel differently?

"Insight" questions:

15. After this discussion, how would you now define the problem?
16. What would you personally recommend as a solution to the case if you were:
    a. (List each of the key characters in the case.)
    b. ---
    c. ---

"Re-evaluation" of first impression—"metacognition" or "Mode II" awareness questions:

17. Go back to your first opinion about the case. Now, what do you think?
18. What does this case tell us about individuals making personal decisions within the context of (group norms) — particularly if the group values are in conflict?

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